Fatigue and performance in repetitive industrial work

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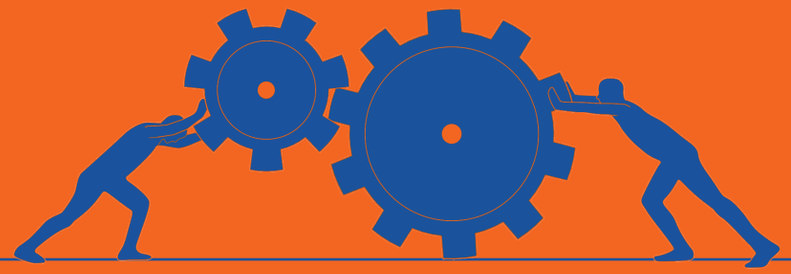

Nowadays, monotonous activities involving repetitive hand and finger movements at low force levels are increasingly common in the industrialized world. Exposure to low-force occupational work with prolonged sustained contractions of the muscle might lead to fatigue. Assuming that muscle fatigue is a precursor of upper extremity disorders and may reduce performance of employees, it is important to get an improved insight in temporal patterns of loading during these tasks.

The main objective of this thesis was to assess how EMG manifestations of muscle fatigue develop during low-force occupational work. This thesis describes how EMG indicators of muscle fatigue relate to feelings of perceived fatigue. The relationship between manifestations of muscle fatigue, kinematics and performance was investigated and the effects of temporal aspects of the work (work duration, rest breaks and work pace) on the development of muscle fatigue in the neck and shoulder were established.

TNO MOVE BODY@WORK

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Tim Bosch

Body @ Work

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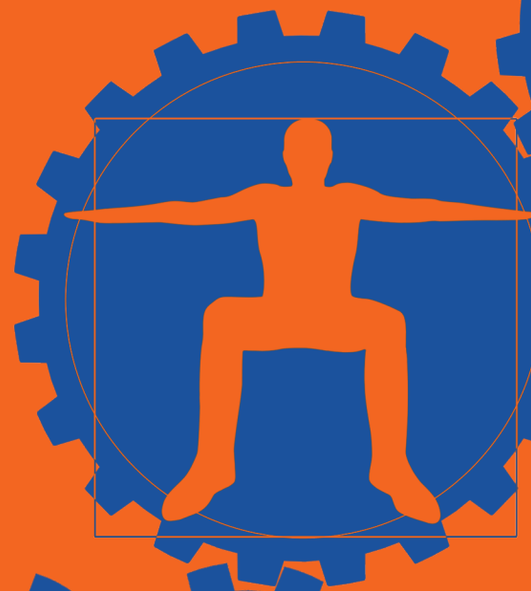

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